

5 through the seat [and directing it] for the purpose of increasing
6 a seat occupant's thermal comfort [to an occupant];

7 at least one heat pump for providing temperature conditioned
8 air, each heat pump being connected to the seat by an air conduit
9 and including one or more fan and one or more thermoelectric
10 module;

11 a controller for [automatically] activating and regulating the
12 operation of each heat pump to produce temperature conditioned air
13 at a temperature and fan speed to maximize the thermal comfort of
14 a seated occupant;

15 at least one temperature sensor for monitoring the operation
16 of each heat pump, the temperature sensor being electrically
17 connected to the controller; and

18 means for automatically operating the controller to optimize
19 system response, to provide maximum thermal comfort to the seated
20 occupant, and to control heating and cooling functions of the
21 system to minimize occupant discomfort and adverse physiological
22 response.

Please cancel claim ~~2~~ to ~~6~~

Please amend claim 7 as follows:

1 7. (Amended) A system for controlling the temperature
2 climate in a variable temperature occupant seat comprising:
3 an occupant seat having [internal air channels] means for
4 distributing temperature conditioned air through the seat to
5 increase a seat occupant's thermal comfort [and directing it to an
6 occupant];

at least one heat pump connected to the seat by an air conduit for providing temperature conditioning air to the seat, each heat pump comprising:

a number of thermoelectric modules for temperature conditioning the air;

[a main exchanger] at least one fan for passing the temperature conditioned air through the seat to an occupant[; and

a waste exchanger fan] and for removing unwanted thermal energy from the thermoelectric modules;

[a temperature sensor positioned in each heat pump; and]

a controller for [automatically] activating and regulating the operation of the thermoelectric modules and fans of each heat pump independent of occupant input; and

means for automatically operating the controller to optimize system response, to provide maximum thermal comfort to the seated occupant, and to control cooling functions of the system to minimize occupant discomfort and adverse physiological response.

Please cancel claims ~~8~~ to ~~14~~

Please amend claims 15, 17 and 19 as follows:

215. (Amended) The system as recited in claim ~~14~~ 1 comprising a temperature sensor attached to the heat pump [positioned] to sense the operation of the heat pump, the temperature sensor being electrically connected to the controller to facilitate controlling the operation of the heat pump.

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17. (Amended) The system as recited in claim 7 comprising [a
2 occupant presence sensitive] an indicator switch attached to
3 [positioned in] the seat to detect the presence of an occupant, the
4 indicator switch [and] being electrically connected to the
5 controller [for automatically activating the heat pump upon an
6 occupant sitting in the seat].

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19. (Amended) A system for controlling the temperature
climate in a variable temperature occupant seat comprising:

3 an occupant seat comprising a seat bottom and a seat back
4 portion each having [internal air channels] means for distributing
5 temperature conditioned air through the seat and directing it to an
6 occupant;

7 a seat back heat pump for conditioning the temperature of the
8 air and passing the air through an air conduit to the seat back,
9 the seat back heat pump comprising a main exchanger fan and a
10 number of thermoelectric modules;

11 a seat bottom heat pump for conditioning the temperature of
12 the air and passing the air through an air conduit to the seat
13 bottom, the seat bottom heat pump comprising a main exchanger fan
14 and a number of thermoelectric modules;

15 a temperature sensor positioned in each heat pump; [and]
16 [means] a controller for automatically [controlling the
17 activation] activating and regulating the speed of the main fans,
18 and automatically selecting the mode of operation for the
19 thermoelectric modules in each heat pump; and

20 means for automatically operating the controller to optimize
21 system response, to provide maximum thermal comfort to the seated
22 occupant, and to control cooling functions of the system to
23 minimize occupant discomfort and adverse physiological response.

Please cancel claims 20 to 24 and 26

Please amend claim 27 as follows:

27. (Amended) A method for controlling the temperature climate in a variable temperature occupant seat, the method comprising the steps of:

activating a number of thermoelectric modules [for temperature conditioning] to provide temperature conditioned air to be distributed through a variable temperature seat;

activating at least one electric fan for passing the temperature conditioned air through [air channels] means inside of the variable temperature seat [to an occupant];

sensing a system [the] temperature [of the thermoelectric modules] and relaying the temperature information to a controller; and

automatically adjusting the electrical power to each thermoelectric module [according to the temperature of the thermoelectric modules] when the thermoelectric modules are operated in a cooling mode and when the temperature of the temperature conditioned air is below a minimum cooling temperature a predetermined amount of time after the cooling mode has been selected.

Please cancel claims 29 to 32

Please amend claim 33 as follows:

33. (Amended) The method as recited in claim 27 further comprising the steps of automatically activating each fan and each thermoelectric module by occupying the seat and automatically

~~deactivating each fan and each thermoelectric [device] module by
vacating the seat.~~

Please cancel claims ~~34~~ and ~~35~~

Please amend claim 36 as follows:

1 736. (Amended) A method for controlling the temperature
2 climate in a variable temperature occupant seat, the method
3 comprising the steps of:

4 sensing whether the seat is occupied and relaying the
5 information to a controller configured to automatically regulate
6 the operation of one or more thermoelectric modules and fans;

7 activating [a number of] at least one thermoelectric [modules]
8 module in response to sensing occupancy of the seat to provide
9 [for] temperature [conditioning] conditioned air [to be passed and
10 distributed through a variable temperature seat];

11 activating at least one fan for passing the temperature
12 conditioned air through air channels inside of the variable
13 temperature seat [to an occupant];

14 sensing [the] a system temperature [of the thermoelectric
15 modules] and relaying the temperature information to [a] the
16 controller [configured to automatically regulate the operation of
17 the thermoelectric modules and fans]; and

18 [automatically deactivating the electrical power to the
19 thermoelectric modules when the operating temperature of the
20 thermoelectric modules is either above a predetermined maximum
21 temperature or below a predetermined minimum temperature]

22 automatically reducing electrical power to the thermoelectric
23 modules when operated in a cooling mode after the temperature of
24 the temperature conditioned air is below a minimum cooling

25 temperature and after a maximum amount of time has passed since the
26 system was placed in a cooling mode of operation.

Please cancel claims 37 to 45

Please amend claim 46 as follows:

1 846. (Amended) The method as recited in claim [45] 26 further
2 comprising the steps of reducing [the] electrical power to the
3 thermoelectric modules when operated in a cooling mode, the
4 operating temperature is below a predetermined cooling temperature,
5 a predetermined amount of time has passed since the temperature was
6 last adjusted by the occupant, and the temperature of the
7 conditioned air directed to an occupant is a cooler by a
8 predetermined amount than the ambient temperature surrounding the
9 occupant.

Please add new claims 50 to 57 as follows:

1 -- 50. The system as recited in claim 1 further comprising an
indicator for detecting the presence of the seat occupant, the
indicator being electrically connected to the controller.--

1 -- 51. The system as recited in claim 1 wherein the means for
2 automatically operating the controller reduces the cooling
3 functions of the system when the temperature of the temperature
4 conditioned air is below a minimum cooling temperature and after a
5 maximum amount of time has passed since the system was placed in a
6 cooling mode of operation.--

1 -- ¹⁴52. The system as recited in claim ¹³51 wherein the reduction
2 in cooling functions is achieved by reducing power to the
3 thermoelectric module.--

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1 -- ¹⁵53. The system as recited in claim ¹³51 wherein the reduction
2 in cooling functions is achieved by reducing power to the
3 thermoelectric module and to the fan.--

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1 -- 54. The system as recited in claim 7 wherein the means for
2 automatically operating the controller reduces the cooling
3 functions of the system when the temperature of the temperature
4 conditioned air is below a minimum cooling temperature and after a
5 maximum amount of time has passed since the system was placed in a
6 cooling mode of operation.--

1 -- 55. The system as recited in claim 7 wherein the means for
2 automatically operating the controller includes:
3 means for activating at least one of thermoelectric modules
4 for producing temperature conditioned air;
5 means for activating at least one fan and regulate the speed
6 of the fan for passing the temperature conditioned air from the
7 heat pump to the occupant seat;
8 means for sensing an operating temperature of the heat pump;
9 and
10 means for deactivating the thermoelectric module when the
11 operating temperature of the heat pump is above a maximum
12 temperature.--

1 -- 56. The system as recited in claim 19 wherein the means for
2 automatically operating the controller includes: